

# PROGRAM | workshop

## Beyond! Topology and Materials



### Sunday - July 09, 2017

- 4:00 pm - 6:00 pm Arrival at Castle Ringberg (Check-In)  
6:00 pm - 7:00 pm *Welcome Dinner*  
7:00 pm - 8:00 pm **Opening - Concept of the "Beyond!" workshop series**  
| Stuart Parkin

### Monday - July 10, 2017

08:00 am - 9:00 am *BREAKFAST*

Chair | Claudia Felser

- 09:00 am - 09:10 am Short Workshop Introduction - Goals  
09:10 am - 10:00 am **Discovery of the Chiral Majorana Fermion**  
| Shoucheng Zhang  
10:00 am - 10:50 am **The Berry Phase and the Spin Current in AFM Weyl Semimetals**  
| Binghai Yan  
10:50 am - 11:20 am *Refreshing your brain (coffee, tea & more)*

Chair | Ronny Thomale

- 11:20 am - 12:10 pm **Two-dimensional limit of crystalline order in perovskite membrane films**  
| Harold Y. Hwang  
12:10 pm - 12:30 pm *Group photograph*  
12:30 pm - 1:30 pm *Lunch*  
13:30 pm - 2:20 pm **Quantum Liquid state of  $J_{eff}=1/2$  Isospins in Complex Ir Oxides**  
| Hidenori Takagi  
2:20 pm - 3:10 pm **A New Spin on Superconductivity**  
| Amir Yacoby  
3:10 pm - 3:30 pm *Move & talk (coffee, tea & more)*

Chair | Shoucheng Zhang

- 3:30 pm - 4:20 pm **Large-Gap Quantum Spin Hall Effect in InAs / InGaSb**  
| Rui-Rui Du  
4:20 pm - 5:10 pm **Parafermions in Nanowires**  
| Daniel Loss  
5:20 pm - 6:20 pm **Guided tour of the Castle Ringberg**  
| Jochen Essl  
6:30 pm - 7:30 pm *Bavarian night - Buffet at Castle Ringberg*

Chair | Stuart Parkin

- 7:30 pm - 8:20 pm **Magnetic order and excitations in oxide heterostructures**  
| Bernhard Keimer

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## Beyond! Topology and Materials



### Tuesday - July 11, 2017

08:00 am - 09:00 am *BREAKFAST*

Chair | Harold Y. Hwang

09:00 am - 09:50 am **New developments in topological phases: Topological Quantum Chemistry and Berry phases of Berry phases**  
| B. Andrei Bernevig

09:50 am - 10:40 am **Guided Design of Topological Semimetals**  
| Leslie Schoop

10:40 am - 11:10 am *Refreshing your brain (coffee, tea & more)*

Chair | Amir Yakoby

11:10 am - 12:00 pm **Topoelectrical Circuits**  
| Ronny Thomale

12:00 pm - 12:50 pm **Color Code Quantum Computation with Majorana Bound States**  
| Felix von Oppen

1:00 pm - 2:00 pm *Lunch*

Chair | Ke He

2:00 pm - 2:50 pm **Topological Physics in HgTe-Based Quantum Devices**  
| Laurens Molenkamp

2:50 pm - 3:40 pm **Developing a New Experimental Tool for Studying Electronic Structures of Topological Materials**  
| Yulin Chen

3:40 pm - 4:00 pm *Networking time (coffee, tea & more)*

Chair | B. Andrei Bernevig

4:00 pm - 4:50 pm **Quantum Hall Effect and Topology: What Scanning Probe Experiments tell us**  
| Jürgen Weis

4:50 pm - 5:40 pm **Topology and Electronic Structure of Wrinkled Bismuth Monolayers**  
| Aharon Kapitulnik

6:00 pm - 7:00 pm *Dinner*

Chair | Stuart Parkin

7:10 pm - 8:00 pm **Orbital Engineering as a Route Towards Large-Gap QSH Insulators**  
| Werner Hanke

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## Beyond! Topology and Materials



### Wednesday - July 12, 2017

08:00 am - 9:00 am Breakfast (Check-out)

Chair | Binghai Yan

09:00 am - 09:50 am **A Gap-Protected, Zero-Hall State in a 3D Nonsymmorphic Metal**  
| Nai Phuan Ong

09:50 am - 10:40 am **Searching for High Temperature Quantum Anomalous / Spin Hall Materials**  
| Ke He

10:40 am - 11:00 pm **Closing remarks - future directions**  
| Stuart Parkin

11:15 pm - 12:15 pm *Lunch*

Departure - Taxi transfer to Tegernsee station